

FOCUS ON EDUCATION

WINTER 2004

EXCELLENCE IN EDUCATION

Sandia National Laboratories believes that active participation in a variety of educational partnerships and programs will strengthen our future through the success of our students. As the education of our children and young adults is essential to the development of a productive workforce for the new economy, our activities are comprehensive and span all levels of learning.

We are proud to highlight a few of our successes and spread the word about the exciting opportunities we provide for students, teachers, and volunteers. We hope you will see a program or two that you want to learn



Two students from Cibola High School receive a \$2000 U.S. Savings Bond as winners of the first "It's the Write Thing To Do" essay contest.

'FUN IN THE SUN' SCIENCE DAYS

The excitement of science shouldn't stop in the summer. We have expanded our highly successful Family Science Nights to reach students in community summer camps. The "Fun in the Sun" experiments provide an opportunity for children ages 5 through 5th grade to work together to conduct simple, inquiry-based, age-appropriate science activities. The primary goal is to stimulate an excitement and interest in science among elementary school children.

IT'S THE WRITE THING TO DO

Recognizing the importance of literacy, Sandia added a new competition in the areas of Science, Engineering and Mathematics, through a new scholastic essay-writing program called "It's The Write Thing To Do."



A student at Valle Vista Elementary School performs an experiment as part of our Summer Science Day program called "Fun in the Sun."

more about. Give us a call at **284-5200** or explore a little further on our Adventures in Science and Knowledge website at www.sandia.gov/ASK.



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The competition encourages students in grades 9 through 12 to express their interest in pursuing science, engineering, and mathematics careers. High school students select a topic from four questions constructed by Sandia employees. Five lucky winners receive a \$2000 U.S. Savings bond.

WHAT'S GOING ON THIS YEAR?

- **High School Science Bowl** - February 28, 2004
- **School to World** - March 13, 2004
- **NW New Mexico Regional Science and Engineering Fair** - March 19, 2004
- **Strange Matter at the National Atomic Museum** - through May 2, 2004
- **Thunderbird Awards** - April 26, 2004
- **Excellence in Science Teaching Awards** - May 25, 2004

FUNDS FOR THE CLASSROOM

Sandia National Laboratories and Lockheed Martin Corporation made a one-time cash contribution to local high school science departments for the purchase of science equipment. Each comprehensive high school received \$2000; each alternative high school received \$350. These contributions enabled the science departments to purchase much needed equipment such as microscopes, balances, and computerized analysis equipment.

LOOKING INTO THE FUTURE

On December 2, 2003 nearly 40 Albuquerque area high school students, teachers, and parents joined scientists and engineers from Sandia Labs' Advanced Concept Group for an evening of problem solving. In what we hope will be an annual event, scientist and engineers brainstormed with small groups of high school students to attempt to solve important, current issues facing the world today. Students attended the following

sessions and then reported to the large group their results: How would you survive if marooned on Mars? What will school look like for your kids? What should science do about global warming? Should Big Brother be watching you? While the students were analyzing those questions, teachers learned about brainstorming techniques.

QUALITY IN EDUCATION

The **National Quality Education Conference (NQEC)** is the premier conference providing education leaders opportunities to examine continuous improvement principles. These quality principles have been successfully used to meet the requirements of education policies such as the "No Child Left Behind" act.

The 2003 NQEC hosted in Albuquerque was a great success. People from 43 states and 6 countries attended. There were over 800 attendees. In addition to nationally known speakers, a panel of Albuquerque students discussed how they use quality concepts and the Baldrige Criteria in their classrooms.



The 2003 New Mexico Science Bowl Champions from Eldorado High School. The New Mexico High School Science Bowl is a tournament-style academic competition that challenges and recognizes students' knowledge of science and mathematics.

FUTURE STARS IN ENGINEERING

The **STAR** program, a partnership between Lockheed Martin, Sandia National Labs, and the University of New Mexico, is designed to provide an intense summer experience for highly motivated and talented students in science and math. Students selected for this 8-week program spend their time each week working closely with a Sandia scientist or engineer on a technical project.

C O R P O R A T E O U T R E A C H

“Through the STAR Program, I was able to work last summer at the Advanced Materials Laboratory (AML) with Tim Boyle and Scott Bunge. Since the AML is located off base, I worked with no classified materials. My mentors allowed me to perform chemistry in an effort to synthesize complex ceramic materials. The work I did on the project will eventually be published in a scientific journal. I still continue to work at the AML, and I plan to continue working at the AML while attending the University of New Mexico.”

■ Harry Pratt, 2003 STAR Program Participant



Miranda Fleig (right) was the 2003 Excellence in Science Teaching Awards Winner from Del Norte High School. Winners received a cash award for use in their classrooms.

SCIENCE AND ENGINEERING FAIRS

Science and Engineering Fairs provide the venue for students to learn to analyze information, make accurate observations, develop questions, and test hypotheses. In short, students become familiar with a scientific approach to solving problems. In addition to judging at almost every local elementary and middle school fair, Sandia National Laboratories supported the 2003 NW New Mexico Regional Science and Engineering Fair with more than 190 judges and mentors and a cash contribution.

Science fairs began as early as 1928, when the American Institute of New York City first held a fair for city youths at the Museum of Natural History. In 1950, science fairs went under the auspices of Science Service, a non-profit institution. They became international in 1960.

Sandians will play important roles in the **International Science and Engineering Fair** set for May 2007. This Science and Engineering fair is the World Series and Olympics of science fairs rolled into one. Sandians serve on the steering committee. The Fair is set to attract 5,000 people from 40 countries and should generate \$8 to \$10 million for the local economy.

TRAINING TECHNOLOGISTS

There is a large demand by local and national organizations for individuals trained in radiation protection. Because of a shortage of skilled individuals, our corporate contributions program has provided the Albuquerque Technical Vocational Institute with \$25,000 to design courses in the radiation protection field. The offerings support development of a radiation protection technologist program at TVI.

LEARNING ABOUT THE ENVIRONMENT

Last summer, the staff of the Waste-Management Education and Research Consortium (WERC), Sandia's Environmental Restoration Project, and Corporate Outreach hosted a weeklong environmental stewardship academy for high school students and their teachers. WERC is a New Mexico consortium for environmental education and technology. Mentors from Sandia and the community volunteered to help the 25 students and 25 teachers selected for the Academy. The students learned about environmental protection issues including long-term stewardship. This is the thirteenth year for the **WERC Summer Academy**, and was one of several that Sandia and WERC partnered to produce.



Students examine a mist-netted bird before releasing it. This was one of several activities the WERC participants enjoyed.

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VOLUNTEER SPOTLIGHT

Sandia National Labs Engineer, **Tim O'Hern**, is a great example of a Sandian committed to exciting students about science and engineering. Tim's résumé of outreach activities includes: CroSSLinks volunteer at Inez Elementary School, New Mexico Regional Science Bowl official, Sandia Base Elementary Science Fair judge, and STAR summer intern mentor at Sandia. At Inez, Tim holds classroom sessions on the scientific method, prepares students for the annual Science Expo, and is the resident "Ask a Scientist" expert. Here is what Tim says about his involvement:



A student participates in the "Color and Light" demonstration that is available as a CroSSLinks activity. Over 100 volunteers advance the teaching of hands-on science in local classrooms.

"I enjoy working with elementary school students using hands-on science activities because their enthusiasm is infectious. I see a real need for hands-on science in this day of video games."

"A real inspiration for me to work with kids, besides my own, was a workshop organized by CroSSLinks and the Albuquerque Public Schools by Charles and Priscilla Scaife on how to put on a Family Science Night. They provided an excellent overview of how to get kids to go above and beyond the simple demonstrations shown in class, and how to tie in other subjects with math and science."

Tim truly exemplifies a commitment to his community. Everyone benefits when Sandia and its employees are actively involved in the education of the next generation of scientist and engineers.

Visit us at www.sandia.gov/ciim or call **(505) 284-5200** for more information.

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